

Amendments to the claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An apparatus comprising:  
a vacuum chamber containing a particle detecting integrated circuit, the particle detecting integrated circuit including a plurality of devices, each of the plurality of devices including a pair of conductive lines that are configured to define a device having a pair of exposed conductive lines defining a channel configured to capture at least one particle having an associated diameter, the pair of conductive lines of each of the plurality of devices includes a uniform pitch representing a single particle size between pairs ~~the channel having a pitch that is at least equal to or smaller than the diameter of the at least one particle to be captured.~~
2. (Original) The apparatus of claim 1 further comprising a computer system linked to the particle detecting integrated circuit.
3. (Currently amended) The apparatus of claim 1 wherein the particle detecting integrated circuit includes a remote-controlled movable cover protecting the plurality of devices ~~device.~~
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)

7. (Currently amended) The apparatus of claim 2 wherein the computer system detects ~~is configured to detect~~ a change in current when a metallic particle shorts the ~~pair of~~ exposed conductive lines of one of the plurality of devices.

8. (Currently amended) The apparatus of claim 2 wherein the computer system detects ~~is configured to detect~~ a change in capacitance when a non-metallic particles lodges on or between the ~~pair of~~ exposed conductive lines of one of the plurality of devices.

9. (Currently amended) An apparatus comprising:  
a mask stage in a vacuum chamber of semiconductor processing equipment;  
a particle detecting integrated circuit embedded in the mask stage, the particle detecting integrated circuit ~~containing a device~~ comprising a plurality of devices, each of the plurality of devices having a pair of conductive lines exposed to a local vacuum environment, the pair of ~~conductive lines are configured to define~~ defining a channel ~~configured to capture at least one~~ particle having an associated diameter, the pair of conductive lines of each of the plurality of devices having a uniform pitch representing a single particle size ~~the channel having a pitch that is at least equal to or smaller than the diameter of the at least one particle to be captured.~~

10. (Original) The apparatus of claim 9 further comprising a computer system linked to the particle detecting integrated circuit.

11. (Currently amended) The apparatus of claim 10 wherein the pair of conductive lines of each of the plurality of devices is configured to have an applied voltage.

12. (Currently amended) The apparatus of claim 11 wherein the computer system detects ~~is configured to detect~~ a change in current when a metallic particle shorts the pair of conductive lines of one of the plurality of devices.

13. (Currently amended) The apparatus of claim 11 wherein the computer system detects ~~is configured to detect~~ a change in capacitance when a non-metallic particle lodges on or

between the pair of conductive lines of one of the plurality of devices of the particle detecting integrated circuit.

14. (Original) The apparatus of claim 10 wherein the computer system is semiconductor component circuitry.

15. (Original) The apparatus of claim 10 wherein the computer system is off-chip circuitry.

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (New) An apparatus comprising:

a vacuum chamber containing a particle detecting integrated circuit, the particle detecting integrated circuit including a plurality of devices, each of the plurality of devices including a pair of conductive lines that are configured to define a channel to capture at least one particle having an associated diameter, the pair of conductive lines of each of the plurality of devices includes one of a plurality of pitches representing a range of particle sizes between pairs.

31. (New) The apparatus of claim 30 further comprising a computer system linked to the particle detecting integrated circuit.

32. (New) The apparatus of claim 30 wherein the particle detecting integrated circuit includes a remote-controlled movable cover protecting the plurality of devices.

33. (New) The apparatus of claim 31 wherein the computer system is configured to detect a change in current when a metallic particle shorts the exposed conductive lines of one of the plurality of devices.

34. (New) The apparatus of claim 31 wherein the computer system is configured to detect a change in capacitance when a non-metallic particles lodges on or between the exposed conductive lines of one of the plurality of devices.

35. (New) An apparatus comprising:

a mask stage in a vacuum chamber of semiconductor processing equipment;

a particle detecting integrated circuit embedded in the mask stage, the particle detecting integrated circuit comprising a plurality of devices, each of the plurality of devices having a pair of conductive lines exposed to a local vacuum environment, the pair of conductive lines are configured to define a channel to capture at least one particle having an associated diameter, the pair of conductive lines of each of the plurality of devices having a non-uniform pitch representing a range of particle sizes.

36. (New) The apparatus of claim 35 further comprising a computer system linked to the particle detecting integrated circuit.

37. (New) The apparatus of claim 36 wherein the pair of conductive lines of each of the plurality of devices is configured to have an applied voltage.

38. (New) The apparatus of claim 37 wherein the computer system is configured to detect a change in current when a metallic particle shorts one of the pairs of conductive lines.

39. (New) The apparatus of claim 37 wherein the computer system is configured to detect a change in capacitance when a non-metallic particle lodges on or between the pair of conductive lines of one of the plurality of devices of the particle detecting integrated circuit.

40. (New) The apparatus of claim 36 wherein the computer system is semiconductor component circuitry.

41. (New) The apparatus of claim 36 wherein the computer system is off-chip circuitry.